

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A network connection system comprising:

a client apparatus;

an authentication server; and

a connection server, wherein:

the authentication server includes:

a retention unit for storing second connection authentication

information generated by the connection server based on user identification information and
associating storing an association between the second connection authentication information
with a and a connection server address of the connection server;

a first unit for acquiring, from the client apparatus, second connection authentication information that is generated by the client apparatus based on user identification information input into the client apparatus and acquiring a client address of the client apparatus when the first unit receives a connection request from the client apparatus;
and

a second unit for transmitting the client address to the connection server address associated with the second connection authentication information acquired by the first unit and transmitting the connection server address to the client apparatus;

the client apparatus includes:

a third unit for transmitting the second connection authentication

information generated by the client apparatus to the authentication server together with the connection request;

a fourth unit for receiving the connection server address from the authentication server; and

a fifth unit for preparing first connection authentication information based on the user identification information input into the client apparatus and transmitting, independent of the authentication server, the first connection authentication information to the connection server address of the connection server; and server:

the connection server includes:

a sixth unit for allowing the first connection authentication information to be received from the client address, apparatus, the client address being received from the authentication server; and

a seventh unit for performing itself an authentication process by using the first connection authentication information transmitted from the client address, address, and

the authentication server, in response to receiving the second connection authentication information from the client apparatus, searches the retention unit for the second connection authentication information to determine the connection server address associated with the second connection authentication information.

2. (Original) The network connection system according to claim 1, wherein the second connection authentication information is a message digest of the first connection authentication information.

3. (Currently Amended) An authentication server for being connected to a plurality of client apparatuses and a plurality of connection servers, the authentication server comprising:

a retention unit for storing second connection authentication information generated based on user identification information and associating storing an association

between each second connection authentication information with a and a connection server address of a corresponding connection server;

a first unit for acquiring the second connection authentication information from ~~the client~~ a client apparatus and a client address when the first unit receives a connection request from the client apparatus; and

a second unit for transmitting the acquired client address to the connection ~~server, server~~ address of the connection server associated with the acquired second connection authentication information, and transmitting, independent of the connection server, the connection server address to the client apparatus which has transmitted the connection-request, request, wherein

the authentication server, in response to receiving the second connection authentication information from the client apparatus, searches the retention unit for the second connection authentication information to determine the connection server address associated with the second connection authentication information.

4. (Canceled)

5. (Currently Amended) A connection server operating with an authentication server and a client apparatus, the connection server comprising:

a control unit for receiving a client address of the client apparatus from the authentication server after the authentication server authenticates information received from the client address and switching from a state in which authentication information is not allowed to be received from the client address, independent of the authentication server, to a state in which authentication information is allowed to be received allowing authentication information to be received from the client address, independent of the authentication server, the switching occurring in response to the receiving of the client address; and

an authentication unit for receiving the authentication information from the client apparatus having the client address to perform itself an authentication process by using the authentication information.

6. (Currently Amended) A network connection system comprising:

a client apparatus;

an authentication server; and

a connection server, wherein:

the authentication server includes:

a retention unit for storing a first encrypted user name and a first encrypted password, which are encrypted by a first encryption method, and ~~for associating storing an association between~~ a connection server address of the connection server ~~with the and the~~ first encrypted user name and the first encrypted password;

a first unit for acquiring the first encrypted user name and the first encrypted password and a client address when the first unit receives a connection request from the client apparatus, the first encrypted user name and the first encrypted password being an identification information for identifying a user of the client apparatus; and

a second unit for transmitting the acquired client address to the connection server address associated with the user identification information, receiving from the connection server information indicating that the connection server has shifted to a connection wait state, and transmitting, independent of the connection server, the connection server address to the client ~~apparatus, and~~ apparatus.

the client apparatus includes:

a third unit for transmitting to the authentication server the first encrypted user name and the first encrypted password, which are encrypted by the first encryption method, together with the connection request; and

a fourth unit for receiving the connection server address from the authentication server, and transmitting, independent of the authentication server, to the connection server address a second encrypted user name and a second encrypted password, which are generated by encrypting using a second encryption method a user name and a password input by the user, user, and

the authentication server, in response to receiving the first encrypted user name and the first encrypted password from the client apparatus, searches the retention unit for the first encrypted user name and the first encrypted password to determine the connection server address associated with the first encrypted user name and the first encrypted password.

7. (Currently Amended) An authentication server operating with a plurality of client apparatuses and a plurality of connection-servers servers, the authentication server comprising:

a retention unit for storing user names and passwords, which are encrypted by a predetermined method, and associating for storing associations between both of each user name and each password with a and a connection server address of a corresponding connection server;

a first unit for acquiring an acquired encrypted user name, an acquired encrypted password, and an acquired client address when the first unit receives a connection request from the client apparatus, the encrypted user name and password being an identification information of a user of the client apparatus; and

a second unit for transmitting the acquired client address to the connection server address associated with the acquired encrypted user name and password, receiving from the connection server information indicating that the connection server has shifted to a connection wait state in which authentication information is not allowed to be received from the client address, independent of the authentication server, to a state in which authentication

information is allowed to be received from the client address, independent of the authentication server, and transmitting, independent of the connection server, the connection server address to the client apparatus, which has issued the connection request. request, wherein

the authentication server, in response to receiving the identification information of a user of the client apparatus from the client apparatus, searches the retention unit for the identification information of a user of the client apparatus to determine the connection server address associated with the identification information of a user of the client apparatus.

8. (Canceled)

9. (Previously Presented) A client apparatus operating with an authentication server and a connection server, the client apparatus comprising:

 a connection request unit for transmitting to the authentication server a connection request and a user name and a password which are encrypted by a first encryption method;

 a receiving and transmitting unit for receiving, independent of the connection server, a connection server address from the authentication server, encrypting by a second encryption method the user name and the password input by a user, and transmitting the encrypted user name and password to the connection server address;

 a retention unit for storing local authentication information, which is previously supplied from the connection server, the local authentication information associating unique information of the client apparatus with at least one of a user name and a password previously provided to the connection server; and

 a local authentication unit for generating the unique information upon receiving a user name and a password input by the user, and authenticating the user name and

the password input by the user by judging based on the local authentication information whether or not at least one of the user name and the password input by the user is associated with the unique information, wherein:

the connection request unit transmits to the authentication server the connection request and the user name and the password which are encrypted by the first method only when the user name and the password input by the user are authenticated by the local authentication unit.

10. (Currently Amended) A connection server operating with a client apparatus and an authentication server, the connection server comprising:

a control unit that receives from the authentication server an address of the client apparatus and switches, in response to the receiving of the address, from a state in which authentication information is not allowed to be received from the client address, independent of the authentication server, to a state in which authentication information is allowed to be received from the client address, independent of the authentication server, and allows communication from the address of the client apparatus for a predetermined period; and

a transmitting unit that transmits to the authentication server information indicating that the connection server has shifted to a connection wait state in which the connection server allows communication from the address of the client apparatus for the predetermined period.

11. (Previously Presented) A network connection system comprising:

a client apparatus;

an authentication server for supplying information guiding a connection destination to the client apparatus; and

a connection server, wherein the client apparatus:

calculates first authentication information unique to the client apparatus to register the first authentication information in the connection server, acquires local authentication information from the connection server, the local authentication information associating the first authentication information with a predetermined authentication information and second authentication information with the predetermined authentication information, and stores the local authentication information;

receives second authentication information input by a user when the user instructs a connection request with respect to the connection server, again calculates the first authentication information unique to the client apparatus, authenticates the second authentication information and the again calculated first authentication information based on the stored local authentication information, and if authentication is successful, encrypts the second authentication information by a first encryption method and transmits the encrypted second authentication information to the authentication server; and

receives, independent of the connection server, from the authentication server a connection server address of the connection server, transmits to the connection server address the second authentication information encrypted by a second encryption method and starts communication with the connection server.

12. (Previously Presented) A connection method using a network connection system including a client apparatus, an authentication server, and a connection server, the method comprising:

storing in the authentication server second connection authentication information generated by the connection server based on first connection authentication information;

associating the second connection authentication information with a connection server address of the connection server;

transmitting by the client apparatus to the authentication server a second connection authentication information generated by the client apparatus as user identification information together with a connection request;

acquiring a client address and the user identifying information from the client apparatus when the authentication server receives the connection request from the client apparatus;

transmitting the client address to the connection server address of the connection server when the user identification information is authenticated based on the second connection authentication information;

transmitting the connection server address to the client apparatus;

receiving by the client apparatus, independent of the connection server, the connection server address from the authentication server;

transmitting by the client apparatus a first connection authentication information to the connection server address;

receiving by the connection server the first connection authentication information from the client address; and

performing an authentication process by using the first connection authentication information transmitted from the client address.

13. (Currently Amended) A connection method using a network connection system including a client apparatus, an authentication server, and a connection server, the method comprising:

storing by the authentication server a user name and a password which are encrypted by a first encryption method;

associating storing in a retention unit in the authentication server an association between both the encrypted user name and the encrypted password with a and a connection server address of the connection server;

transmitting by the client apparatus to the authentication server a connection request and the user name and the password which are encrypted by the first encryption method;

receiving by the authentication server the connection request from the client apparatus;

acquiring a client address of the client apparatus and the user name and the password, which are encrypted by the first encryption method, as information identifying a user of the client apparatus;

searching, by the authentication server, in response to receiving the information identifying the user of the client apparatus from the client apparatus, the retention unit for the information identifying the user of the client apparatus to determine the connection server address associated with the information identifying the user of the client apparatus;

transmitting the client address to the connection server address;

receiving by the connection server the client address;

allowing communication from the client apparatus;

switching, by the connection server, from a state in which authentication information is not allowed to be received from the client address, independent of the authentication server, to a state in which authentication information is allowed to be received from the client address, independent of the authentication server, the switching occurring in response to the receiving of the client address;

transmitting to the authentication server information indicating that the connection server has shifted to a connection wait state in which the connection server allows communication from the address of the client apparatus for a predetermined period;

encrypting using a second encryption method a user name and a password input by a user;

transmitting, independent of the authentication server, to the connection server address the user name and the password which are encrypted by the second encryption method; and

performing, by the connection server, an authentication process by using the user name and the password which are encrypted by the second encryption method and are received by the connection server from the client apparatus.

14. (New) The network connection system according to claim 1, wherein the sixth unit of the connection server allows the first connection authentication information to be received from the client address for a limited time period.

15. (New) The connection server according to claim 5, wherein after a limited time period has elapsed since the control unit performs the switching, the control unit switches back from the state in which authentication information is allowed to be received from the client address, independent of the authentication server, to the state in which authentication information is not allowed to be received from the client address, independent of the authentication server.

16. (New) The connection method according to claim 12, further comprising:
allowing the connection server to receive the first connection authentication information from the client address for a limited time period.

17. (New) The connection method according to claim 13, further comprising:

after a limited time period has elapsed since the connection server performs the switching, switching back from the state in which authentication information is allowed to be received from the client address, independent of the authentication server, to the state in which authentication information is not allowed to be received from the client address, independent of the authentication server.

18. (New) A computer readable medium storing a program causing a computer of a client apparatus to execute an access processing to a network system including an authentication server and a connection server, wherein,

the authentication server includes (i) a first unit that acquires, from the connection server, an address of the connection server and user identification information encrypted by the connection server with a first encryption method and (ii) a first retention unit that stores the address of the connection server and the encrypted user identification information which are acquired by the first unit,

the connection server includes a second retention unit that stores unique information which is unique to the client apparatus and the user identification information,

the client apparatus includes a third retention unit that stores an address of the authentication server, first information and second information, wherein the first information is generated by the connection server by encrypting predetermined information with the unique information as a key and the second information is generated by the connection server by encrypting predetermined information with the user identification information as a key,

the access processing comprising:

requesting a user to enter user identification information,

receiving user identification information from the user,

generating unique information which is unique to the client apparatus in response to receiving the user identification information,

decrypting the first information stored in the third retention unit by using the generated unique information as a key,

decrypting the second information stored in the third retention unit by using the received user identification information as a key,

judging whether the decrypted first and second information are correct,

encrypting the received user identification information with the first encryption method when the decrypted first and second information is correct, and

transmitting, to the authentication server, an access request and the received used identification information encrypted with the first encryption method.